

REMARKS

Claims 1-21 and 24-27 are pending in the application. Claims 1-3, 8, 9, 13-21 and 27 are rejected under 35 U.S.C. §102(e). Claims 4-7, 10-11 and 24-26 are rejected under 35 U.S.C. §103(a). Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request that the Examiner reconsider and withdraw these rejections.

I. REJECTIONS UNDER 35 U.S.C. §102(e):

The Examiner has rejected claims 1-3, 8, 9, 13-21 and 27 under 35 U.S.C. §102(e) as being anticipated by Kroyan et al. (U.S. Publication No. 2005/0188338) (hereinafter "Kroyan"). Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request the Examiner to reconsider and withdraw these rejections.

For a claim to be anticipated under 35 U.S.C. §102, each and every claim limitation must be found within the cited prior art reference and arranged as required by the claim. M.P.E.P. §2131.

Applicants respectfully assert that Kroyan does not disclose "based on the simulating step, identifying portions of the layout representation in which extra manufacturability margin is present" as recited claim 1. The Examiner cites paragraph [0046] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 3. Applicants respectfully traverse and assert that Kroyan instead discloses that the analysis process performed by the analysis engine 203 determines distinct pattern types which have different criticality leading to different manufacturability margin requirements. [0046]. Kroyan further discloses that a new set of 'refined' design rules emerges in association with each pattern type. [0046]. Hence, Kroyan discloses refining design rules for each pattern type. There is no language in the cited passage that discloses based on a simulating step, identifying portions of the layout representation. Neither is there any language in the cited passage that discloses based on a simulating step, identifying portions of the layout

representation in which extra manufacturability margin is present. Thus, Kroyan does not disclose all of the limitations of claim 1, and thus Kroyan does not anticipate claim 1. M.P.E.P. §2131.

In response to Applicants' above argument, the Examiner cites paragraph [0076] as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 13. Applicants respectfully traverse and assert that Kroyan instead discloses that the output simulation results are then analyzed by a manufacturability parameter value extractor 5104 which is capable of extracting various manufacturability parameter values. [0076]. Kroyan further discloses that the manufacturability parameters include numeric values, such as critical dimensions, image contrast, image log-slope, a mask error enhancement factor (MEF), depth of focus, exposure latitude, and the like, or more complex quantitative descriptions of manufacturability, such as process window (PW), or the like, for example. [0076]. There is no language in the cited passage that discloses that based on a simulating step, identifying portions of the layout representation in which extra manufacturability margin is present. Instead, Kroyan simply discloses the manufacturability parameters used to analyze the simulation results. Thus, Kroyan does not disclose all of the limitations of claim 1, and thus Kroyan does not anticipate claim 1. M.P.E.P. §2131.

If the Examiner is asserting that it is inherent for there to be portions in the layout representation in which extra manufacturability margin is present (see Office Action 11/6/2006, page 13), Applicants respectfully assert that the claim recites identifying portions of the layout representation in which extra manufacturability margin is present. If the Examiner is asserting that it is inherent for Kroyan to identify portions of the layout representation in which extra manufacturability margin is present (see Office Action 11/6/2006, page 13), Applicants respectfully traverse. The Examiner must provide a basis in fact and/or technical reasoning to support the assertion that Kroyan inherently discloses identify portions of the layout representation in which extra manufacturability margin is present. *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). That is, the Examiner must provide extrinsic evidence that must make clear that Kroyan inherently discloses identify portions of the layout representation in which extra manufacturability margin

is present, and that it would be so recognized by persons of ordinary skill. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). Since the Examiner has not provided any such objective evidence, the Examiner has not presented a *prima facie* case of anticipation for rejecting claim 1. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein modifying the design rule compliant layout includes modifying the layout in violation of at least one design rule with which the layout is compliant" as recited in claim 27. The Examiner cites paragraph [0080] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 4. Applicants respectfully traverse and assert that Kroyan instead discloses that the layout manufacturability enhancement system 5100 further comprises a layout modification instruction generator 5109 that determines the relationship between the non-compliance properties of the 'weak spots' and the localized geometrical configuration of layout patterns within a range of influence. [0080]. There is no language in the cited passage that discloses modifying a design rule compliant layout. Neither is there any language in the cited passage that discloses modifying a design rule compliant layout which includes modifying the layout in violation of at least one design rule which the layout is compliant. Thus, Kroyan does not disclose all of the limitations of claim 27, and thus Kroyan does not anticipate claim 27. M.P.E.P. §2131.

In response to Applicants' above argument, the Examiner cites paragraphs [0080-0082] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 14. Applicants respectfully traverse.

Kroyan instead disclose that the layout manufacturability enhancement system 5100 comprises a layout modification instruction generator 5109 that determines the relationship between the non-compliance properties of the "weak spots" and the localized geometrical configuration of layout patterns within a range of influence. [0080]. Kroyan further discloses that the layout modification instruction generator 5109 generates layout modification instructions and rules that are input to a layout modification/compaction engine 5110 comprising the layout manufacturability

enhancement system 5100. [0081]. Kroyan additionally discloses that design rules 5111 that are applied to the design of a layout 5101 are also input to the layout modification/compaction engine 5110. [0081]. Kroyan further discloses that based on the instructions received from the layout modification instruction generator 5109, the layout modification/compaction engine 5110 finds an optimal solution for all of the manufacturability "weak spots." [0081]. Additionally, Kroyan discloses that after the process performed by the layout modification/compaction engine 5110 has been completed, the layout may be routed back to the simulation engine 5102 to assure that no additional "weak spots" remain. [0082]. Hence, Kroyan discloses inputting the design rules to the layout modification/compaction engine which were also applied to the design of the layout. The modification/compaction engine then finds an optimal solution for all the manufacturability weak spots. Hence, Kroyan clearly does not disclose modifying the design rule compliant layout which includes modifying the layout in violation of at least one design rule with which the layout is compliant. Instead, Kroyan discloses modifying the layout in compliance with the design rules. Thus, Kroyan does not disclose all of the limitations of claim 27, and thus Kroyan does not anticipate claim 27. M.P.E.P. §2131.

Claims 2-3, 8, 9, 13, 15 and 17-21 each recite combinations of claim 1, and hence claims 2-3, 8, 9, 13, 15 and 17-21 are not anticipated by Kroyan for at least the reasons that claim 1 is not anticipated by Kroyan.

Applicants further assert that Kroyan does not disclose "performing at least one optical proximity correction (OPC) on the initial layout representation before step (b)" as recited in claim 3. The Examiner cites paragraph [0063] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 4. Applicants respectfully traverse and assert that Kroyan instead discloses that the layout processing engine can be a general optical proximity correction (OPC) implementation process, a complex RET flow 2000 such as a combination of phase shift mask (PSM) and OPC; a layout optimization flow 5100 based on modification and/or compaction; and, preferably, mask data preparation (MDP), for example, fracturing; or even a more complex flow containing various combinations of all of the

above. [0063]. There is no language in the cited passage that discloses performing at least one optical proximity correction on the initial layout representation before step (b). Thus, Kroyan does not disclose all of the limitations of claim 3, and thus Kroyan does not anticipate claim 3. M.P.E.P. §2131.

In response to Applicants' above argument, the Examiner cites paragraphs [0063 and 0075] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 14. Applicants respectfully traverse. As stated above, there is no language in paragraph [0063] of Kroyan that discloses performing at least one optical proximity correction on the initial layout representation before step (b). Further, Kroyan instead discloses that the input design layout 5101 is modeled using a simulation engine 5102 in order to predict the layout pattern configuration on a wafer. [0075]. There is no language in paragraph [0075] of Kroyan that discloses performing at least one optical proximity correction on the initial layout representation before step (b). Applicants performed a search for the term optical proximity correction or "OPC" and did not find any language that indicated that the OPC was performed on the initial layout representation before simulating how structures within at least a portion of the initial layout representation will pattern on a wafer. Applicants respectfully request the Examiner to particularly point out in Kroyan where Kroyan specifically discloses that the OPC was performed on the initial layout representation before simulating how structures within at least a portion of the initial layout representation will pattern on a wafer pursuant to 37 C.F.R. §1.104(c)(2). Thus, Kroyan does not disclose all of the limitations of claim 3, and thus Kroyan does not anticipate claim 3. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein for portions of the layout representation including structures demonstrating poor manufacturability, step (e) includes: at least one of (i) providing more space between adjacent structures, (ii) decreasing linewidth of one or more structures, and (iii) making edges of one or more structures wider" as recited in claim 14. The Examiner cites paragraph [0024] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 5. Applicants respectfully traverse and assert that

Kroyan instead discloses a system and method for providing resolution enhancement technique (RET) to partition the refined design layout into a desired level of granularity based on specified layout/IC properties. [0024]. Kroyan further discloses that at that localized level, RET is applied to manipulate the layout based on the critical aspects from a manufacturability standpoint. [0024]. There is no language in the cited passage that discloses that for portions of the layout representation including structures demonstrating poor manufacturability, the modification step includes providing more space between adjacent structures. Neither is there any language in the cited passage that discloses that for portions of the layout representation including structures demonstrating poor manufacturability, the modification step includes decreasing linewidth of one or more structures. Neither is there any language in the cited passage that discloses that for portions of the layout representation including structures demonstrating poor manufacturability, the modification step includes making edges of one or more structures wider. Thus, Kroyan does not disclose all of the limitations of claim 14, and thus Kroyan does not anticipate claim 14. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein for portions of the layout representation in which extra manufacturability margin is present, step (e) includes: compacting at least a portion of the layout representation" as recited in claim 15. The Examiner cites paragraph [0046] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 6. Applicants respectfully traverse and assert that Kroyan instead discloses that for pattern types with little or no manufacturability margin, it may be necessary to relax the design rules to increase the manufacturability margin, whereas, for pattern types with excess manufacturability margin, it may be possible to tighten or compact the design rules. [0046]. Hence, Kroyan discloses that for pattern types with excess manufacturability margin, it may be possible to tighten the design rules. Tightening or compacting the design rules is not the same as compacting at least a portion of the layout representation. Neither is there any language in the cited passage that discloses compacting at least a portion of the layout representation when extra manufacturability margin is present. Thus,

Kroyan does not disclose all of the limitations of claim 15, and thus Kroyan does not anticipate claim 15. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein for portions of the layout representation in which extra manufacturability margin is present, step (e) includes: at least one of (i) moving outer corners of structures closer to adjacent structures, (ii) moving contacts closer to inner corners of metal lines, (iii) moving contacts closer to polysilicon end caps, (iv) reshaping active or metal layers to maintain width and space, and (v) adding side extensions to polysilicon end caps" as recited in claim 16. The Examiner cites claim 10 of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 6. Applicants respectfully traverse.

Kroyan instead discloses tightening or compacting the design for localized patterns with excess manufacturability margin. Claim 10. There is no language in claim 10 of Kroyan that discloses that for portions of the layout representation in which extra manufacturability margin is present, step (e) includes moving outer corners of structures closer to adjacent structures. If the Examiner is equating the phrase "tightening or compacting the design" with moving outer corners of structures closer to adjacent structures, Applicants respectfully request the Examiner to provide objective evidence to support this assertion. The Examiner must provide a basis in fact and/or technical reasoning to support the assertion that the phrase "tightening or compacting the design" in Kroyan discloses moving outer corners of structures closer to adjacent structures. *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). That is, the Examiner must provide extrinsic evidence that must make clear that the phrase "tightening or compacting the design" in Kroyan discloses moving outer corners of structures closer to adjacent structures, and that it would be so recognized by persons of ordinary skill. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). Since the Examiner has not provided any such objective evidence, the Examiner has not presented a *prima facie* case of anticipation for rejecting claim 16. M.P.E.P. §2131.

Further, there is no language in claim 10 of Kroyan that discloses that for portions of the layout representation in which extra manufacturability margin is present, step (e) includes moving contacts closer to inner corners of metal lines. Neither is there any language in claim 10 of Kroyan that discloses that for portions of the layout representation in which extra manufacturability margin is present, step (e) includes moving contacts closer to polysilicon end caps. Neither is there any language in claim 10 of Kroyan that discloses that for portions of the layout representation in which extra manufacturability margin is present, step (e) includes reshaping active or metal layers to maintain width and space. Neither is there any language in claim 10 of Kroyan that discloses that for portions of the layout representation in which extra manufacturability margin is present, step (e) includes adding side extensions to polysilicon end caps. Thus, Kroyan does not disclose all of the limitations of claim 16, and thus Kroyan does not anticipate claim 16. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein step (e) is performed despite there existing no violation of any of the plurality of design rules" as recited in claim 19. The Examiner cites paragraph [0046] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 7. Applicants respectfully traverse and assert that Kroyan instead discloses that the analysis performed by the analysis engine 203 determines distinct pattern types which, although resulting from the same design rules, have different criticality leading to different manufacturability margin requirements. [0046]. There is no language in the cited passage that disclose that the step of "modifying at least one of (i) portions of the layout representation which include structures demonstrating poor manufacturability and (ii) portions of the layout representation in which extra manufacturability margin is present" is performed despite there existing no violation of any of the plurality of design rules. Thus, Kroyan does not disclose all of the limitations of claim 19, and thus Kroyan does not anticipate claim 19. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein step (c) includes providing a graphical representation indicating structures demonstrating poor manufacturability" as recited in claim 20. The Examiner cites paragraphs [0086-0087] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 7. Applicants respectfully traverse and assert that Kroyan instead discloses that the instruction generator 6095 analyzes the output on-wafer patterns and calculates functional relationships between non-compliant manufacturability parameters and the layout variables. [0086]. Kroyan further discloses that the geometrical configuration of the layout is quantified by assessment of pattern shapes and measurement of orthogonal distances of feature dimensions, spacing, gaps, pitch, and the like, as shown in Figure 12. [0087]. Hence, Kroyan discloses a geometrical configuration of a layout where the pattern shapes and measurements of orthogonal distances are assessed. However, there is no language in the cited passages that discloses based on a simulating step, identifying those portions of the layout representation which includes structures demonstrating poor manufacturability, where the step includes providing a graphical representation indicating structures demonstrating poor manufacturability. Thus, Kroyan does not disclose all of the limitations of claim 20, and thus Kroyan does not anticipate claim 20. M.P.E.P. §2131.

Applicants further assert that Kroyan does not disclose "wherein step (d) includes providing a graphical representation identifying portions of the layout representation in which extra manufacturability margin is present" as recited in claim 21. The Examiner cites paragraph [0087] of Kroyan as disclosing the above-cited claim limitation. Office Action (11/6/2006), page 7. Kroyan further discloses that the geometrical configuration of the layout is quantified by assessment of pattern shapes and measurement of orthogonal distances of feature dimensions, spacing, gaps, pitch, and the like, as shown in Figure 12. [0087]. Hence, Kroyan discloses a geometrical configuration of a layout where the pattern shapes and measurements of orthogonal distances are assessed. However, there is no language in the cited passages that discloses based on a simulating step, identifying portions of the layout representation in which extra manufacturability margin is present, where the step

includes providing a graphical representation identifying portions of the layout representation in which extra manufacturability margin is present. Thus, Kroyan does not disclose all of the limitations of claim 21, and thus Kroyan does not anticipate claim 21. M.P.E.P. §2131.

As a result of the foregoing, Applicants respectfully assert that not each and every claim limitation was found within Kroyan, and thus claims 1-3, 8, 9, 13-21 and 27 are not anticipated by Kroyan. M.P.E.P. §2131.

II. REJECTIONS UNDER 35 U.S.C. §103(a):

The Examiner has rejected claims 4-7, 10-11 and 24-26 under 35 U.S.C. §103(a) as being unpatentable over Kroyan in view of Anderson et al. (U.S. Patent No. 6,425,113) (hereinafter "Anderson"). Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request the Examiner to reconsider and withdraw these rejections.

A. Examiner's motivation for modifying Kroyan with Anderson to include the missing claim limitations of claims 4, 6, 10, 24 and 25 is insufficient to establish a *prima facie* case of obviousness.

Most if not all inventions arise from a combination of old elements. *See In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998). Obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art to which the patent pertains. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998). Therefore, an Examiner may often find every element of a claimed invention in the prior art. *Id.* However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *See Id.* In order to establish a *prima facie* case of obviousness, the Examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). That is, the Examiner must provide some suggestion or motivation, either in the references themselves, the knowledge of one of ordinary skill in the art, or, in some case, the nature of the problem to be solved, to modify the reference or to

combine reference teachings. See *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). Whether the Examiner relies on an express or an implicit showing, the Examiner must provide particular findings related thereto. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

The Examiner admits that Kroyan does not teach "wherein step (c) includes: performing optical rule checking (ORC) on the simulated layout representation" as recited in claim 4. Office Action (11/6/2006), page 9. The Examiner further admits that Kroyan does not teach "wherein ORC is performed on one or more portions of the simulated layout representation over a process window of focus and intensity" as recited in claim 6 and similarly in claim 25. Office Action (11/6/2006), page 10. The Examiner additionally admits that Kroyan does not teach "performing optical rule checking (ORC) on the simulated layout representation using the selected acceptable ranges for the one or more metrics" as recited in claim 10 and similarly in claim 24. *Id.* at 9-10. The Examiner asserts that Anderson teaches these missing claim limitations. *Id.* The Examiner modifies Kroyan with Anderson to include the above-cited claim limitations because "Anderson would improve the invention of Kroyan by providing an ORC component whose job is to determine whether the applied OPC in Kroyan will have the desired corrective effect (see Anderson, Col 2, lines 50-55)." *Id.* The Examiner's motivation is insufficient to establish a *prima facie* case of obviousness in rejecting claims 4-7, 10-11 and 24-26.

The Examiner's motivation ("Anderson would improve the invention of Kroyan by providing an ORC component whose job is to determine whether the applied OPC in Kroyan will have the desired corrective effect") does not provide reasons, as discussed further below, that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Kroyan to include the missing claim limitations of claims 4, 6, 10, 24 and 25. Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4-7, 10-11 and 24-26. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998).

As stated above, the Examiner cites column 2, lines 50-55 of Anderson as support for the Examiner's motivation. Anderson teaches that the data generated by the OPC tool is then typically imported into a simulated tool, to confirm that the OPC will have the desired corrective effect. Column 2, lines 50-52. Anderson further teaches that this is sometimes called an optical and process rule check, or ORC. Column 2, lines 52-53. Anderson further teaches that once this check is complete, the data is exported for use in IC manufacturing process 395. Column 2, lines 53-55. Hence, Anderson teaches that the data generated by the OPC tool is imported into a simulated tool to confirm that the OPC will have the desired corrective effect.

Importing data generated by the OPC tool simulated tool to confirm that the OPC will have the desired corrective effect does not provide reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Kroyan, which teaches overcoming the problems of incorporating manufacturability check or verification into the front-end design (paragraphs [0013-0019]), to perform optical rule checking (ORC) on the simulated layout representation in connection with identifying portions of the layout representation which includes structures demonstrating poor manufacturability (missing claim limitation). Neither does importing data generated by the OPC tool simulated tool to confirm that the OPC will have the desired corrective effect provide reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Kroyan, to have ORC be performed on one or more portions of the simulated layout representation over a process window of focus and intensity (missing claim limitation). Neither does importing data generated by the OPC tool simulated tool to confirm that the OPC will have the desired corrective effect provide reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Kroyan, to perform optical rule checking (ORC) on the simulated layout representation using the selected acceptable ranges for the one or more metrics (missing claim limitation).

Hence, the passage cited by the Examiner as support for his motivation (column 2, lines 50-55 of Anderson) does not provide reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Kroyan to include the missing claim limitations of claims 4, 6, 10, 24 and 25. Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4-7, 10-11 and 24-26. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998).

Further, Kroyan addresses the problem of incorporating manufacturability check or verification into the front-end design. [0013-0019]. The Examiner has not provided any reasons as to why one skilled in the art would modify Kroyan (which teaches overcoming the problems of incorporating manufacturability check or verification into the front-end design) to: (1) perform optical rule checking (ORC) on the simulated layout representation in connection with identifying portions of the layout representation which includes structures demonstrating poor manufacturability; (2) to have ORC be performed on one or more portions of the simulated layout representation over a process window of focus and intensity; and (3) to perform optical rule checking (ORC) on the simulated layout representation using the selected acceptable ranges for the one or more metrics (missing claim limitations). The Examiner's motivation ("Anderson would improve the invention of Kroyan by providing an ORC component whose job is to determine whether the applied OPC in Kroyan will have the desired corrective effect") does not provide such reasoning.

Why would the reason to modify Kroyan (whose purpose is to overcome the problems of incorporating manufacturability check or verification into the front-end design) to: (1) perform optical rule checking (ORC) on the simulated layout representation in connection with identifying portions of the layout representation which includes structures demonstrating poor manufacturability; (2) to have ORC be performed on one or more portions of the simulated layout representation over a process window of focus and intensity; and (3) to perform optical rule checking (ORC) on the simulated layout representation using the selected acceptable ranges for the one or more metrics (missing claim limitations) be to provide an ORC component

whose job is to determine whether the applied OPC will have the desired corrective effect? Kroyan already teaches OPC (see paragraphs [0063, 0064, 0068, 0073 and 0092]. Simply stating providing an OPC component whose job is to determine whether the applied OPC will have the desired corrective effect does not answer the question as to why one skilled in the art would modify Kroyan to include the above-cited claim limitations. Hence, the Examiner's motivation does not provide reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Kroyan to include the missing claim limitations of claims 4, 6, 10, 24 and 25. Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4-7, 10-11 and 24-26. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998).

B. Kroyan and Anderson, taken singly or in combination, do not teach or suggest the following claim limitations.

Applicants respectfully assert that Kroyan and Anderson do not teach or suggest "wherein performing ORC includes checking at least one of aerial image metrics, resist image metrics and post exposure bake metrics" as recited in claim 5. The Examiner cites paragraph [0076] of Kroyan as teaching the above-cited claim limitation. Office Action (11/6/2006), page 10. Applicants respectfully traverse and assert that Kroyan instead teaches that the manufacturability parameters include numeric values, such as critical dimensions, image contrast, image log-slope, a mask error enhancement factor (MEEF), depth of focus (DOF), exposure latitude (EL), and the like, or more complex quantitative descriptions of manufacturability, such as process window (PW), or the like, for example. [0076]. There is no language in the cited passage that teaches performing ORC. Further, there is no language in the cited passage that teaches performing ORC includes checking at least one of aerial image metrics, resist image metrics and post exposure bake metrics. Therefore, the Examiner has not presented a *prima facie* case of obviousness in rejecting claim 5, since the Examiner is relying upon incorrect, factual predicates in support of the rejection. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998).

III. ALLOWABLE SUBJECT MATTER:

Applicants appreciate the indication of allowability of claim 12.

IV. CONCLUSION:

As a result of the foregoing, it is asserted by Applicants that claims 1-21 and 24-27 in the Application are in condition for allowance, and Applicants respectfully request an allowance of such claims. Applicants respectfully request that the Examiner call Applicants' attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining issues.

Respectfully submitted,

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